FIBER OPTIC GYROSCOPE FOR CONTINUOUS MEASUREMENT OF LOW AND HIGH RATES OF ROTATION

ABSTRACT OF THE DISCLOSURE

A fiber optic gyroscope includes a light source and a phase modulator coupled to an optical fiber coil. Light from the source is divided into a pair of first light signals that are directed into opposite ends of the coil to counter propagate through the coil and produce corresponding second light signals the relative phases of which are shifted by the modulator. In one embodiment, a waveform generator defines a modulation waveform so that a determined sequence of five or more phase shifts are set between the second light signals, including shifts of zero degrees, +90 degrees, -90 degrees, +180 degrees and –180 degrees. The second light signals interfere with one another to define a recombined light signal, and measurement signals corresponding to the intensity of the recombined light signal are obtained for each phase shift in the sequence. A rate of rotation of the coil is determined continuously in accordance with the measurement signals and a given interference function.